School exclusion in children with psychiatric disorder or impairing psychopathology: A systematic review

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Abstract

Childhood psychiatric disorders are associated with a wide range of adverse outcomes including poor academic attainment. For some children these difficulties are recognised through school Special Educational Need procedures (SEN) but many others may remain unidentified and/or unsupported. In Britain, government data suggests disproportionate representation of children with a SEN among children permanently excluded from school. This review asks whether school-aged children with impairing psychopathology were more likely to be excluded from school than those without. Databases covering education, social sciences, psychology and medicine were searched, experts were contacted and bibliographies of key papers were hand-searched. Studies were included if the population covered school-aged children, and if validated diagnostic measures had been used to assess psychopathology. Children with impairing psychopathology had greater odds of exclusion compared to the rest of the school-age population: odds ratios range from 1.13 (95% CI: 0.55 to 2.33) to 45.6 (95% CI: 3.8 to 21.3). These findings however need to be considered in light of the paucity of the literature and methodological weaknesses discussed.

Keywords – Exclusion, suspension, mental health, psychopathology, systematic-review

Introduction

School exclusion, the removal of a pupil from the school environment, is used as a disciplinary tool across education systems internationally. Exclusion from school, also referred to as suspensions and expulsions in other educational systems, can be for a fixed period of time or permanent where the child is removed from the school roll.

In 2011/12 the Department for Education (DfE) in England reported the overall number of exclusions had decreased, but that children with SEN were eight times more likely to be permanently excluded from school than those without SEN (DfE 2013). Similarly, over-representation of children with SEN is reported in the US and Europe (COM 2011, Krezmien, Leone, and Achilles 2006, U.S. Department of Education 2012, Skiba and Sprague 2008). These figures, however, may not provide a true reflection of the actual problem. Recent publications from the Children's Commissioner highlight that many illegal exclusions of children from schools occur in the UK (Children's Commisioner 2012, 2013).

The adverse consequences and functional impairment of a mental health diagnosis are widely reported (Parsons 2010, Hodgson and Webb 2005). Similarly, exclusion is 'an act with potentially wide ranging consequences not only for the individual but also for society more broadly' (Hayden, 2003). The inequalities highlighted in these already disadvantaged groups have been reported to be associated with trajectories towards poverty, reiterating the need for a greater understanding of the reasons leading to disadvantage (Centre for Social Justice 2011, Hemphill et al. 2010).

Current English legislation and the Europe 2020 strategy emphasise the importance of improving behaviour in the classroom (DfE 2010, COM 2011). A proportion of children facing exclusion may have unidentified or unsupported psychiatric disorders or mental health needs, which implies that some exclusions could be avoided if their difficulties were accurately identified and effectively managed.

Although the adverse consequences of a mental health diagnosis and exclusion from school are well reported (Hemphill et al. 2010, Parsons 2010, Daniels et al. 2003, Hayden and Dunne 2001), the interface between childhood psychopathology and exclusion from school however seems less clear. We have used well-tested methods from the health science area to perform a systematic review of the available evidence from comparative studies to explore the association between school aged children with a psychiatric disorder or impairing psychopathology and exclusion from school, compared to their peers with better mental health.

Method

The review was undertaken following the principles published by the NHS Centre for Reviews and Dissemination (CRD 2009), with no limits on publication date or language for the searches. The protocol is available from the PenCLAHRC website (http://clahrc-peninsula.nihr.ac.uk/est-projects.php).

Eligibility Criteria

Studies were included in the review if the population were school-aged children (4-18 years) and if validated measures had been used to assess the presence of psychopathology to ensure accurate identification of diagnosis or difficulty. The outcome of interest was exclusion from school. Studies were included internationally and therefore exclusion from school included any reference to a child who had been 'excluded' (permanent exclusion/expelled) or 'suspended' (fixed-term exclusion) regardless of the duration. Both primary and secondary research was included. Studies were not excluded based on study quality, but needed to analyse an intervention group against a comparison group.

Studies were excluded at the screening stage if they ***only*** reported on academic attainment, assessed an intervention for mental health, reported on pupils refusing to attend school or did not use a validated measure to assess psychopathology. We defined a validated measure as one that had established psychometric properties in order to select studies of a high methodological rigour. As we did not want to exclude literature that reported on difficulties rather than psychiatric disorder, validated cut points on dimensional measures were also accepted as well as diagnostic measures.

Search Strategy

The search strategy was created in consultation with researchers, clinicians and experts and is described fully in Appendix A. The following databases were searched from inception to January 2013: Applied Social Science Index and Abstracts, Australian Education Index, British Education Index, Campbell Collaboration, Cochrane/Central, Education Research Complete, Educational Resources Information Centre, Embase, International Bibliography of the Social Sciences, Medline, PsycInfo, SocIndex, Social Policy and Practice and Web of Science. These were accessed via four interfaces; ProQuest, Dialog, EBSCO or Ovid.

In addition, we contacted experts in the field and searched bibliographies of key identified papers and further information from the authors was requested for clarification (Bauermeister

et al. 2007, Christian and Frick 1997, Meyer et al. 1993, Miller, Nevado-Montenegro, and Hinshaw 2011, Rushton, Forcier, and Schectman 2002, Barkley et al. 1991).

Screening and Data Extraction

Titles, abstracts and full texts were screened for relevance independently by two reviewers (CP and RW). Disagreements were resolved through discussion by a third reviewer (TF). Data extraction and quality assessment of the included studies was performed by one reviewer and checked by a second. Study characteristics and the quality of included papers were recorded using a standardised and piloted data extraction form (Appendix B).

Analysis

The included studies were heterogeneous, consequently pooling of the results was not appropriate. We therefore reported individual estimates of association (odds ratio) between psychopathology and exclusion/suspension status in a narrative style. The odds ratios presented were in some cases calculated from summary statistics reported in the papers in order for results from the included studies to be comparable.

Results

Results of the search

From the database searches, 5,120 potentially relevant papers were identified. After screening and citation chasing five studies met all the inclusion criteria (Christian and Frick 1997, Meyer et al. 1993, Reinke et al. 2008, Rohde et al. 1999, Rushton, Forcier, and Schectman 2002), two were included through hand searches (Bauermeister et al. 2007, Miller, Nevado-Montenegro, and Hinshaw 2011), two were identified through experts in the field (Barkley et al. 1991, Norwich, Cooper, and Maras 2002).

The most frequent reason for exclusion after full text screening was the wrong population (did not include children or young people who had a psychiatric disorder or impairing psychopathology, n=25). Other studies were excluded based on the wrong outcomes (not reporting on exclusion from school, n=19), study design (no comparator, n=5), no primary data (n=20) or the incorrect setting (not a mainstream school, n=3) (see Fig. 1). The total number of children in the included studies was 20,844. One study only included girls (Miller, Nevado-Montenegro, and Hinshaw 2011). Three of the studies focussed on children aged between 4-17 years old (Bauermeister et al. 2007, Christian and Frick 1997, Miller, Nevado-

Montenegro, and Hinshaw 2011), others reported on adolescents between 11-17 years (Meyer et al. 1993, Rohde et al. 1999, Rushton, Forcier, and Schectman 2002, Barkley et al. 1991, Norwich, Cooper, and Maras 2002) and one was restricted to children aged 6-7 years (Reinke et al. 2008).

Study Characteristics

The characteristics of the nine included studies are reported in Table 1. All studies reported school exclusion/suspension as a *secondary* rather than a *primary* outcome. It was also unclear exactly when the expulsion or suspension occurred and/or for how long. Six studies reported on suspension or expulsion that had occurred prior to the assessment of psychopathology (Bauermeister et al. 2007, Christian and Frick 1997, Meyer et al. 1993, Rohde et al. 1999, Rushton, Forcier, and Schectman 2002, Norwich, Cooper, and Maras 2002) and two studies reported prospectively with an assessment of psychopathology at baseline and measured exclusion between baseline to follow up (Miller, Nevado-Montenegro, and Hinshaw 2011, Reinke et al. 2008). The remaining study was unclear in reporting when the suspension or expulsion occurred in relation to the diagnosis (Barkley et al. 1991).

Five of the studies used parental reports of expulsion and suspension (Bauermeister et al. 2007, Christian and Frick 1997, Miller, Nevado-Montenegro, and Hinshaw 2011, Rohde et al. 1999, Barkley et al. 1991). Reinke and colleagues, (2008) was the only study to use school records to gain suspension and expulsion data on the children in their sample. Adolescent reports of suspension and expulsion from school were used by Meyer et al. (1993) and Rushton, Forcier, and Schectman (2002), the remaining study was unclear in the informant of the exclusion (Norwich, Cooper, and Maras 2002). Parental and young person reports might be distorted by forgetfulness and/or social desirability and, where psychopathology was assessed after exclusion, recall bias may operate.

In all nine studies the assessment of psychopathology was undertaken on study entry and in the majority of studies it was not clear whether children had clinically-identified diagnoses prior to the study or the age of onset of the disorder. Miller and colleagues (Miller, Nevado-Montenegro, and Hinshaw 2011) and Barkley et al. (1991) reported that a clinical ADHD diagnosis was known at the beginning of the study or they had been referred to specialists for ADHD and another study included children who were reported to have severe emotional, behavioural or learning problems but had not necessarily undergone a clinical assessment, (Christian and Frick 1997).

Six studies were based in the USA (Christian and Frick 1997, Meyer et al. 1993, Miller, Nevado-Montenegro, and Hinshaw 2011, Reinke et al. 2008, Rushton, Forcier, and Schectman 2002, Barkley et al. 1991), one in Puerto Rico (Bauermeister et al. 2007), one in Brazil (Rohde et al. 1999) and one in England (Norwich, Cooper, and Maras 2002).

Sample sizes varied from 120 to 13,568. The setting from which children were recruited ranged from public state schools, mental health services and national surveys. All studies were observational and reported main estimates of association based on cross-sectional data, therefore no inferences can be drawn about causality.

Quality of studies included

Each of the nine included studies was evaluated using the quality criteria outlined in Supplementary Table 2. The quality of the included studies was fairly consistent; most were poor at reporting eligibility criteria, particularly exclusion criteria. The variation in the setting may limit the ability to generalise some of the findings because they may not be a true reflection of the general population. The dates of recruitment were rarely reported or clear, which may be important as education policies and guidance may vary across populations, places and time. The presentation of results varied greatly, so we have chosen to group results by the type of psychopathology studied where possible.

Attention-deficit hyperactivity disorder (ADHD)

Of the nine studies, five reported on children with ADHD (Rohde et al. 1999, Bauermeister et al. 2007, Miller, Nevado-Montenegro, and Hinshaw 2011, Barkley et al. 1991, Norwich, Cooper, and Maras 2002). Four used parent-reported measures and one obtained parent and teacher reported data (Norwich, Cooper, and Maras 2002). Two studies used the Diagnostic Interview Schedule for Children (DISC-IV, Shaffer et al (2000); (Miller, Nevado-Montenegro, and Hinshaw 2011, Bauermeister et al. 2007) whilst both Rohde and colleagues and Barkley and colleagues used the Child Behaviour Checklist (CBCL, (Achenbach 1991)), Barkley and colleagues also used the child self-reported CBCL. In addition Rohde et al. (1999) used a screening instrument based on DSM-IV ADHD symptoms (APA 1994) and Barkley et al. (1991) constructed a structured psychiatric interview specifically for the study that collected information of the occurrence of symptoms of disruptive behaviour disorders based on the DSM- IIIR criteria for ADHD, CD and ODD. Norwich et al (2002) used the hyperactivity scale from the well-validated Strengths and Difficulties Questionnaire (SDQ)(Goodman 1997).

Barkley et al, (1991) showed a significant difference between the mean number of suspensions for children with ADHD (m=3, SD=5.4) and those in the control group (m=0.1, SD=0.5); (t (159=4.69, p=<0.001). Chi-squared tests were conducted to compare the percentage of children that were suspended between the ADHD group and the control group. There was strong evidence of a higher percentage of children being suspended in the ADHD group (p<0.001).

Rohde et al. (1999) reported the proportion of adolescents who had been suspended was higher in the ADHD group compared to the non-ADHD group (48%, 11/23, versus 17%, 8/168; adjusted OR: 4.58 (95% CI: 1.64 to 12.5)).

Similarly, Bauermeister and colleagues (2007) reported children with ADHD in their community sample had greater odds of being suspended in the last year (adjusted OR: 2.46 (95% CI: 1.31 to 4.63) than children in the non-ADHD group. Miller and colleagues (Miller, Nevado-Montenegro, and Hinshaw 2011) compared the subsequent risk of suspension from baseline to five year follow-up between girls with and without an ADHD diagnosis at baseline. They reported that the odds of being suspended from school were four times greater in the girls with ADHD (adjusted OR: 4.1 (95% CI: 1.6 to 11.4).

Norwich and colleagues (2002) found evidence at the 5% level that children identified by parents as hyperactive were more likely to have had permanent exclusions (1.4% versus 0.2%) and that children identified by teachers as hyperactive were more likely to have had permanent exclusions (1.0% versus 0.2%). The odds of permanent exclusion from school were much greater for children with hyperactivity compared to those peers without as reported by both the parent and teacher (OR = 8.94 (95% CI: 1.27 to 99.1) and 4.09 (95% CI: 0.81 to 19.1, p 0.02), respectively).

Depression

Two studies reported on the association between depression and school suspension (Rushton, Forcier, and Schectman 2002, Meyer et al. 1993). The findings reported by Meyer and colleagues (1993) were based on baseline data from a longitudinal study that explored the relationship between individual undesirable life events and depression in adolescents. Rushton and colleagues' (2002) study described the range of depressive symptoms reported by adolescents in a nationally representative sample of all public and private high schools in the USA.

The two studies differed quite substantially on sample size (Meyer (1993) N= 454, Rushton (2002) N= 13,568). Both used the Centre for Epidemiological Studies Depression Scale

(CES-D, Radloff (1977) as their main screening measure of depressive symptoms. The CES-D was initially developed to be used on adults and opinion is mixed on the sensitivity of the scale to detect depression in adolescents (Costello and Angold 1988). Meyer (1993) also used the Schedule for Affective Disorders and Schizophrenia in School Age Children (K-SADS, Chambers et al (1985)) to interview those who were above the threshold on the CES-D.

Rushton (2002) reported that adolescents with persistent moderate/severe depression at 12 month follow-up had a greater odds of ever having had a school suspension (OR 1.9; 95% CI: 1.3 to 2.7). The adjusted odds of being suspended from school was also greater amongst those who had major depressive disorder according to the K-SADS; (OR 4.92; 95% CI: 2.11 to 11.5) (Meyer et al. 1993).

Other

The remaining two studies reported on psychopathy and behaviour (Christian and Frick 1997, Reinke et al. 2008). Christian and Frick (1997) assessed callous and emotional traits, conduct disorder (CD) and oppositional defiant disorder (ODD) in a clinical sample. Two thirds had not had any psychiatric or psychological treatment. The authors, however, were aware that the sample had been referred to the centre for severe emotional, behavioural or learning problems. Callous and unemotional traits, were measured by the Psychopathy Screening Device (PSD, Frick and Hare (in press)), and ODD and CD were assessed according to DSM III-R (APA 1987) diagnostic criteria using the Diagnostic interview Schedule for Children (DISC-2.3 Shaffer et al (1992)).

A cluster analysis of the ratings of callous unemotional traits (CU) as well as the parent and teacher reported symptoms of CD and ODD was carried out. The authors used logistic regression to compare the odds of having a history of school suspensions for children with these three types of difficulty (CU traits, conduct disorder or both) to a control group, adjusting for socioeconomic status, full scale IQ, age and gender. The unadjusted odds ratios are presented in Table 1. Compared to the controls, children in the psychopathic conduct cluster had greater odds of having had a suspension over their lifetime (OR 45.6 (95% CI: 3.8 to 21.28)). Children in the impulsive conduct cluster had 20 times greater odds (OR 20 (95% CI: 2.42 to 8.90)) and children with callous unemotional traits had 10 times greater odds (OR 10.7 (95% CI: 1.32 to 4.80)) than control children of having had a suspension over their lifetime.

Reinke and colleagues (2008) carried out latent class analysis to identify classes with similar profiles of psychopathology and educational attainment. The authors used logistic regression to compare the odds of school disciplinary removals prospectively from first to sixth grade between the classes. Four groups were derived for boys: no problems; academic and behaviour problems; behaviour problems only; and academic problems only. There were insufficient girls to define a distinct behaviour problem only group. Results from the academic problems only classes were beyond the scope of this review and were therefore excluded. Results were presented separately for boys and girls. For boys, relative to the no problem class, the odds for suspension from school in the sixth grade were 6.6 times (95% CI: 2.0 to 21.2) greater for those with academic problems and behaviour problems at baseline and 3.4 times (95% CI: 1.4 to 8.6) greater for those with behaviour problems only. Girls also had greater odds of being suspended if they had academic and behaviour problems (OR = 1.83; 95% CI: 0.91 to 1.25).

Discussion

The purpose of the current review was to critically evaluate the empirical literature that reported on the likelihood of exclusion from school among children and young people with impairing psychopathology. This paper and its partner that explores the prevalence of psychopathology among young people who have experienced exclusions from school (Whear et al. 2013) are, to the best of our knowledge, the first papers to systematic review this issue. Although both reviews focus on the relationship between exclusion from school and childhood psychopathology, they each take a different perspective. In contrast to the current review, where the initial population of interest is children who have significant psychopathology, Author 2 and colleagues' (2013) take as their starting point children who have been excluded from school and explore the prevalence of psychopathology amongst them. Author 2 and colleagues' (2013) review therefore discuss the issue from an educational perspective rather than the mental health perspective that this review presents. Although the two papers are addressing related questions they address different populations and therefore the relevance of these questions will vary by audience. There is overlap between the papers included (Bauermeister et al. 2007, Meyer et al. 1993, Rushton, Forcier, and Schectman 2002), these allowed for the question to be explored from both perspectives providing greater clarity on the topic.

After a comprehensive and sensitive search only nine observational studies met the inclusion criteria for the current paper. Taken together, they show some evidence of an association between the presence of clinically impairing psychopathology in childhood and adolescence and exclusion from school. Our findings also indicate a lack of primary research on the relationship of childhood psychopathology and exclusion from school, but do suggest that there may be increased experience of exclusion among young people with ADHD (Bauermeister et al. 2007, Miller, Nevado-Montenegro, and Hinshaw 2011, Rohde et al. 1999, Barkley et al. 1991, Norwich, Cooper, and Maras 2002), depression (Meyer et al. 1993, Rushton, Forcier, and Schectman 2002) and disruptive behaviour (Christian and Frick 1997, Reinke et al. 2008). The diminutive number and heterogeneity of the studies meant it was not possible to conduct a meta-analysis.

Studies included in this paper reported children with ADHD to have much greater odds of exclusion compared to the school age population without ADHD (Bauermeister et al. 2007, Miller, Nevado-Montenegro, and Hinshaw 2011, Rohde et al. 1999, Barkley et al. 1991, Norwich, Cooper, and Maras 2002). It is not surprising that the majority of the studies reported on ADHD, as it is one of the most common childhood neuro-developmental disorders, and commonly presents with difficulty in coping at school (Washbrook, Propper, and Sayal 2013). Additionally, persistent disruptive behaviour is one of the main reasons given for exclusion from school (DfE 2013) and some argue that children are being excluded from school who have untreated, unidentified or poorly managed ADHD (O'Regan 2010). Children could be wrongly identified as being ‘naughty’ and disruptive, when in fact they have an unsupported need; Donno and colleagues (2010) found 42% of children who had been identified by the school as disruptive obtained pragmatic language scores that were consistent with clinically significant levels of impairment.

Interestingly, two of the included studies reported young people with depression to have higher odds of exclusion from school compared to their peers (Meyer et al. 1993, Rushton, Forcier, and Schectman 2002). Unlike with some childhood psychiatric disorders that are assumed to have neuro-developmental and / or genetic bases, which would imply that exclusion from school, would not precipitate such disorders (e.g. ADHD or Autism Spectrum Conditions), depression is recurrent and fluctuating, is rare before adolescence. Therefore, it is equally plausible that young people who were excluded could have become depressed as a consequence, as it is that the irritability, apathy or low self-esteem driven by depression could lead to exclusion if misinterpreted by school staff as wilful, disengaged misbehaviour.

It is important to consider some of the methodological issues evident in the studies included in this review that may undermine confidence in our findings.

The majority of studies were based in the US. The US Individuals with Disabilities Education Improvement Act IDEA (2004), ensures the rights of children and families of children with disabilities, and outlines the disciplinary procedures. The policy restricts the expulsion or suspension of children that meet the criteria for special education if a relationship is found between the child's disability and the inappropriate behaviour that led to the suspension or expulsion (Smith 2004). There are, however, exceptions to the rule, for example if a child has a weapon or if by maintaining the current placement injury to the child and/or to others may result (Dickinson and Miller 2006, Smith 2004). As the majority of the studies were based in the US at a time where this policy would have been in place the children represented in the included studies may therefore be those who have more severe difficulties or impairment.

Methodological issues in reviewing work from different countries included the use of different terminology and/or different meanings ascribed to the same words. It was difficult to distinguish the *type* and/or *length* of exclusion reported, which may be related to the severity of the child's behaviour in school, as well as the impact of the behaviour on the school environment. This could also be reflective of differences in thresholds; what one school will tolerate, another school will deem to be unacceptable. It is important, in terms of intervention, to be able to make distinctions between those who were excluded from school for one-off events and those who were excluded due to an escalation of challenging behaviour. There are potential meaningful differences between children who may have had a suspension (fixed- term exclusion) compared to a child who is expelled permanently from the school. All included papers, excluding Norwich (2002) reported on 'suspensions' from school, these equate to a fixed-term exclusion in the UK. It was not possible to identify differences between children experiencing single or multiple suspensions compared to those permanently excluded in the included papers. Government statistics in the UK only started to gather information about fixed-term exclusions (suspensions) in 2003/04 (DfE 2013), subsequent empirical research identifying potential differences between permanent and fixed-term exclusions, could be of interest.

The outcome of school exclusion was not the primary focus of any of the included studies, which suggests a significant gap in literature. Publication bias might also have occurred; it is

possible that findings were not published if a non-significant result was found as all papers reported exclusion from school as a secondary outcome.

A number of studies were excluded at the full text screening stage as they did not meet the inclusion criteria; which often reflected poor quality reporting in the abstracts. Two papers that were identified to us by experts in the field were missed from our initial searches because information about exclusion from school was not included in their title, abstract or key words and we may have missed others despite contacting experts. The heterogeneity of the disorders considered made it difficult to make meaningful comparisons across studies, but does suggest that both emotional and disruptive disorders may carry an increased risk of exclusion from school.

Strengths and Limitations of the systematic review

The main strength of this paper is the stringent methodology of a systematic review that was applied. A clearly defined and formulated research question allowed for the assimilation and synthesis of all available evidence to address the research question. Specific search terms relevant to the research question and inclusion criteria were used in combination to identify relevant studies. By broadening the eligibility criteria to include dimensional scales the included papers were not restricted to diagnoses. The aim of a systematic review is to improve reliability and accuracy of conclusions by minimising bias. This is achieved in a number of ways, such as the use of transparent and replicable methods of study selection and data extraction, and by highlighting wherever possible inherent bias in the primary studies. Systematic reviews are an efficient tool for identifying and integrating large quantities of research findings, which might be published in disparate sources and can thus aid rational service planning.

Exclusion from school is complex and it is probable that a number of factors contribute to the outcome. It was not possible to study more contextual factors in this review. The school environment for example, is important to consider when understanding how and why a child might display difficulties. Peer relationships have been reported to be an important factor in school adjustment research (Ladd 1990). School contextual factors could contribute, influence and impact on a child's ability to function as well as help to aid the interpretation (Cicchetti and Stroufe 2000, Ringeisen, Henderson, and Hoagwood 2003). A large epidemiological study suggested that poor teacher-pupil relationships predicted the onset of clinically significant psychopathology (Lang et al. 2013). School effectiveness research has

conducted considerable exploration of school factors on the learning outcomes of students in both academic and social development (Reynolds et al. 2011), a review conducted by Sellstrom and Bremberg reported evidence of a school effect on pupil outcomes (Sellstrom and Bremberg 2006). One hypothesis could be that an effective school would rarely exclude children, but this is an empirical question that remains to be tested.

Implications for the future

We have demonstrated a gap in the literature in terms of quantitative studies of school exclusion in relation to childhood psychopathology, despite a large volume of narrative contextual studies of the influences and impacts of exclusion as well as administrative data provided by government departments of education (DfE 2013, U.S. Department of Education 2012). The findings do show association of psychopathology and exclusion from school. An argument for the lack of specific research could be that many intuitively would perceive those children who have a psychiatric disorder or difficulty would be more likely to be excluded from school and therefore a plausible relationship that would not need or require further research. In contrast one might not readily perceive these relationships if there was an assumption that such children were provided with adequate services to support them. However, intuition is rarely enough to convince funders or commissioners to support interventions that aim to tackle these issues without *evidence* that such issues exist; focused intervention and prevention may not be prioritised. However, this review has enabled synthesis of such literature which suggests that children with specific types of difficulty are more likely to be excluded and highlights the impact of both internalising and externalising difficulties. Arguably, children with undetected psychiatric disorder may improve with identification, if combined with effective management which consequently, might reduce the need for schools to respond with exclusions. More detailed and rigorous research, focused on the types of disorder, whether the psychopathology is recognised and whether affected children are in receipt of services could help provide evidence on which to base guidelines for policy and practice. Studies did not systematically collect data on whether psychopathology had been recognised clinically and/or whether children had received any support in relation to it. Despite consensus that early identification is key to improving the negative outcomes that many studies report on (Breslau et al. 2009, Reinke et al. 2008), there is little empirical support for this assertion.

Both primary and secondary research would address the gap in the literature. Although there are administrative government reported statistics about the percentage of children with SEN who have had an exclusion from school, this would not capture all children with impairing psychopathology as the two classifications capture overlapping but different groups of children. The secondary analysis of existing research and administrative datasets may increase understanding of the kinds of psychopathology, disciplinary crises and issues of recognition and support that contribute to potentially avoidable exclusion from school.

There are a number of inherent issues associated with observational studies, particularly the inability to ascertain causality. It was a particular challenge within this review to identify whether the psychiatric disorder was known prior to the exclusion from school. Because of this, it was not possible to draw conclusions on whether the psychopathology causes the exclusion; the school exclusion causes the psychopathology, whether there is a reciprocal relationship or no causal relationship at all. Exclusion from school is a rare event, yet we know government statistics from England and the US suggest that there are a disproportionate number of children with SEN that are excluded from school (U.S. Department of Education 2012, Skiba et al. 2011, DfE 2013). The majority of the studies included, reported retrospective reports of exclusion from school. Longitudinal studies would allow researchers to follow the trajectory of psychopathology in relation to function at school. Sullivan and colleagues emphasised the limited understanding we have of the causes and correlates of discipline outcomes as well as strategies employed to prevent exclusion from school (Sullivan, Klingbell, and Van Norman 2013). Two studies used the Special Education Elementary Longitudinal Study (SEELS) dataset and proposed the recommendation of further longitudinal research to explore disciplinary exclusion over time (Achilles, McLaughlin, and Croninger 2007, Bowman-Perrott et al. 2011). Both studies reported higher rates of exclusion among students with emotional behavioural difficulties, ADHD and learning difficulties. These two studies failed to meet inclusion criteria for this paper as it was unclear whether a standardised measure of psychopathology was used, however the findings reported from both are of relevance and importance to this discussion. The inclusion criteria set out for this review was used in order to ensure that a clear evidence base was drawn upon, to draw comparisons. Although citation searching and experts were consulted some papers may have been missed that did not report validated methods of diagnosis.

Exclusion from school can be symptomatic of complex problems (Parsons, 2010) including social, family and community issues in addition to mental health and learning. None of the

studies meeting inclusion criteria for the review have explored these contextual factors in relation to the primary outcome of exclusion from school. Other more qualitative studies have explored background factors in depth but do not include the study of psychopathology. Mixed quantitative and qualitative studies would provide more clarity about the types and level of psychopathology, the responses of schools and other agencies and contextual factors that influence exclusion and could identify targets for remediation or intervention.

How might it inform policy?

It is important for policy, practice and implementation to be clear on the areas of need. The adverse consequences that may follow being excluded from school are well known, including higher risks of substance abuse, poor academic outcomes and criminality, with impact at the societal as well as the individual and family level in terms of costs to education, youth justice and mental health services (Hemphill et al. 2010, Parsons 2010, Hodgson and Webb 2005, Centre for Social Justice 2011). Policy, both on a national and international level recognises the need to focus on mental health and behaviour in schools over the last decade (COM 2011, DfE 2011). In one large British population survey, more than 40% of children with an impairing psychiatric disorder at baseline had not been in contact with any service in relation to mental health at a three-year follow up; schools and specialist educational professionals were the most commonly consulted professionals in relation to a child's mental health (Ford et al. 2007). While contact with services does not equate with effective intervention, access to appropriate service can be difficult for children who are excluded from school as boundaries between health and education services may not be coterminous and access to education services may be dependent on being on a school roll.

The association between the use of child and adolescent mental health services (CAMHS) and specialist education services (Ford et al. 2007) emphasises the need for joint collaborative working and a shared responsibility. In the USA, 70-80% of children who receive mental health services do so within the school environment (Burns et al. 1995). The costs of educating a child or young person in alternative provision vary but are high (Taylor 2012, Centre for Social Justice 2011) and there are additional costs to CAMHS.

Evidence of examples of 'illegal' exclusions happening across England were reported in the recent school exclusion inquiry (Children's Commisioner 2012) and suggest that official statistics may under represent the true scale of school exclusions. Current English governmental policy appears to be encouraging schools to respond in a more punitive and

less flexible manner with children who display behaviour problems in the classroom. Similarly the punitive zero-tolerance policy adopted in the US may have accelerated the increase in disciplinary suspensions from school (Skiba and Sprague 2008). In contrast, European policies currently focus on 'encouraging all teachers to assume responsibility for all learners' European Agency (2003). In England, a greater emphasis may shortly be placed on schools to take responsibility of any pupil they wish to exclude (DfE 2010), which should encourage the schools to ensure that an appropriate alternative placement is sought for the child, and perhaps encourage the correct identification of the child's needs before resorting to exclusion. Internationally, the focus on reducing the number of early school leavers is a fundamental priority. Closing the achievement gap and supporting the additional needs of children vulnerable to leaving school early may impact on other European initiatives helping to break the cycle of disadvantage and disengagement (COM 2011).

Constant changes of policy make it difficult to implement change and to invest in longer term interventions. Although there is a common aim between service and policy makers about the welfare of the child, greater consideration of longer term outcomes and costs would provide a better understanding of predictors and enable prevention. Given that children with SEN and, as our findings suggest, children with impairing psychopathology, are over represented among children who are excluded from school, exclusion (or more importantly risk of exclusion) should trigger a systematic assessment of whether a child has an undetected psychiatric disorder and / or learning disability. Any needs identified should lead to the provision of effective intervention for any difficulties detected and might reduce the numbers of children who experience multiple exclusions. It might also be of interest to explore further underlying neurological/genetic dispositions to any difficulties a child may have in order to establish where allowances or support for disruptive behaviour may be made by schools/ services. Education policy and practice differs across international boundaries, although the broader concepts of the right to education and child well-being echo throughout.

Conclusion

The impact and benefits of disciplinary procedures such as excluding a child from school is widely debated; many argue the ineffectiveness of this process but it is still internationally applied as a disciplinary tool. This paper is one of two systematic reviews that has explored the relationship between childhood psychiatric disorder and school exclusion (Whear et al. 2013). Our findings indicate a gap in the literature as well as methodological issues in

relation to design, measures and heterogeneity of studies that made it difficult to make meaningful comparisons.

If we accept that there is a plausible relationship between mental health and exclusion from school, what needs to be addressed is the identification of need and the level and type of support the child is receiving. Schools endeavour to be inclusive of children who may be experiencing difficulties; however the threshold of when a child is excluded within a school is changeable. Schools may be excluding children as a gateway to service involvement or as a respite for their staff members and the other pupils in the class. As there is a large body of evidence that highlights the adverse outcomes of exclusion, there is need to re think the use and purpose of an exclusion from school for a child, particularly those who are within primary schools.

Proposed changes to current policy aim to improve the identification of childhood psychiatric disorders and learning disability, reiterating the importance for more research exploring this relationship. It is important, however, to ensure that schools have not failed to meet children's needs in relation to SEN and psychopathology. Effective identification and intervention may reduce exclusion and improve children's outcomes.

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Table 1- Characteristics of included studies

Source	Design	Country of study	Participants n= (age, years)	Setting	Exposure	Results % (n/d) Exclusion	Odds Ratios (95% CI)
Barkley, 1991	Case-control	US	161 (12-17) 84- ADHD 77- control group	University Medical Center Clinic	No ADHD ADHD	No data[1]	No data
Bauermeister, 2007[2]	Survey	Puerto Rico	2660 (4-17) 1897-community	Island wide probability household sampled	Non ADHD ADHD	15.7% (22/143) 7.1% (125/1754)	Reference group 1.13(0.55 to 2.33)
Christian, 1997[3]	Cross-sectional	US	120, (6-13)	Clinic referred sample, university based outpatient diagnostic and referral services	Control Callous unemotional Impulsive Psychopathic	3.0% (1/39) 22% (9/41) 35% (10/29) 55% (6/11)	Reference group 10.7 (1.32-4.80) 20 (2.42-8.90) 45.6 (3.8-21.28)
Meyer, 1993[4]	Longitudinal survey	US	454 (11-16)	Four public suburban middle schools	Non-depressed Depressed Major depressive disorder	14% (54/385) 33.3% (23/69) No data	Reference group 3.06 (1.63-5.63) 4.92 (2.11-11.49)
Miller, 2011[5]	Longitudinal study	US	228 girls (6-12, 11-17, 17-23 (ADHD n=140, Comparison, n=88)	Paediatric practices, school referrals and community advertisements	Comparison ADHD	9.0%(7/78) 28.6%(36/126)	Reference group 4.06(1.64- 11.4)
Norwich, 2002[6]	Cross-sectional	England	1962, (7-13) 1202- ADHD (n=611, parent reported, n=591, teacher reported)	Part of the Joint National Schools Project	ADHD Parent reported ADHD Teacher reported No ADHD	22.6% (285/1259) 19.7% (417/2115) No data	8.94 (1.27-99.1) 4.09 (0.81-19.1) Reference group

[1]Barkley, 1991 reported on suspensions and expulsions, the author only provided p- values of significance; these are presented in the results section.
[2] Bauermeister, 2007 reported on suspensions or expulsions, OR were adjusted for a number of disorders other than ADHD, care takers education, marital status, perception of poverty and number of comorbid diagnoses.
[3] Christian, 1997 measured the outcome of lifetime suspensions which included in and out of school suspensions, all odds ratios presented are unadjusted.
[4] Meyer, 1993 measured the outcome of suspension over the past year, weighted logistic regression results are presented.
[5] Miller, 2011 reported on the outcome of suspension from baseline to follow up
[6] Norwich, 2002 presented on exclusions, unadjusted odds ratio are presented.

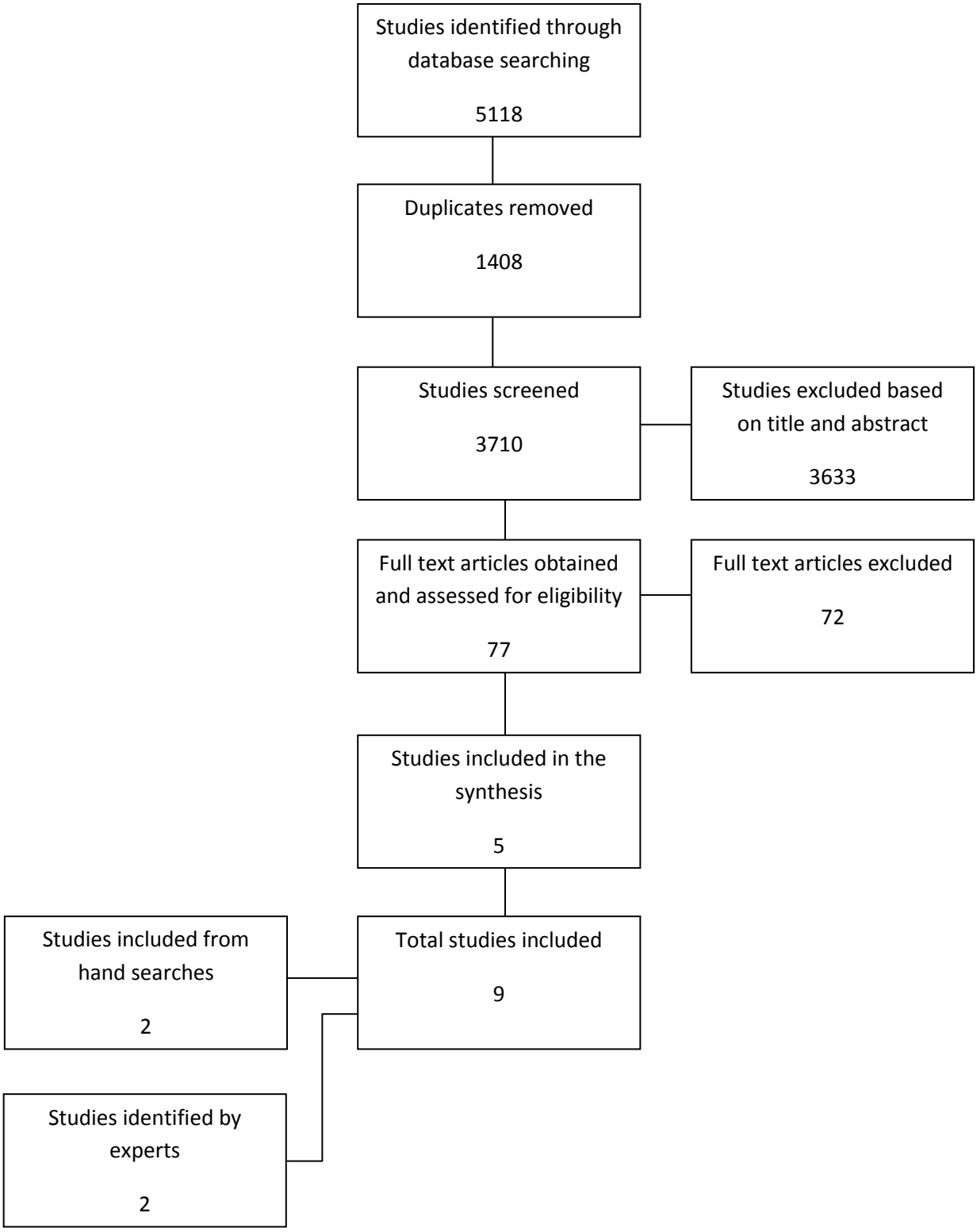
Reinke, 2008[7]	Longitudinal cohort	US	678 (6-7)	Students first grade in nine Baltimore cities, public elementary school	ADHD Boys No problem class Academic and behaviour problems Behaviour problems Girls No problem Academic and behaviour problems	 No data No data No data No data No data	 Reference group 6.57(2.04- 21.20) 3.42(1.36- 8.58) Reference group 1.80(0.91-1.25)
Rohde, 1999[8]	Cross sectional	Brazil	1013 children, aged 12-14 years	Sixty four state schools	Suspension Non ADHD ADHD Expulsion Non ADHD ADHD	 17%(8/168) 48%(11/23) 2.0%(4/168) 17%(4/23)	 Reference group 4.58(1.64- 12.5) Reference group 8.63(1.45- 49.4)
Rushton, 2002[9]	Survey cohort	US	13,568 (12-17)	Representative sample of all public and private high schools in the United States (AddHealth Survey)	Depression	No data	1.9(1.3 -2.7)

[7] Reinke, 2008 reported on the outcome of suspension at sixth grade, OR were adjusted for intervention status

[8] Rohde, 1999 reported on suspensions and expulsions from school (unclear what period this covered.

[9] Rushton, 2002 measured suspensions as an outcome, OR were adjusted for race, grade in school, socio-economic status, maternal educational status and single parent household.

Figure 1- Inclusions and Exclusions



Key points

- **The paucity of the literature and methodological weaknesses made prevented firm conclusions to be made about the relationship between school exclusion and child psychopathology.**
- **The evidence found suggests that there is a group of vulnerable children who are being excluded from school with clinically impairing psychopathology that may or may not have been identified prior to exclusion.**
- **The review particularly identified children with attention deficit hyperactivity disorder, depression and anti-social behaviour as more likely to be excluded from school.**
- **Proposed changes to current policy aim to improve the identification of childhood psychiatric disorders and learning disability and reiterate the importance for more research to explore this relationship.**